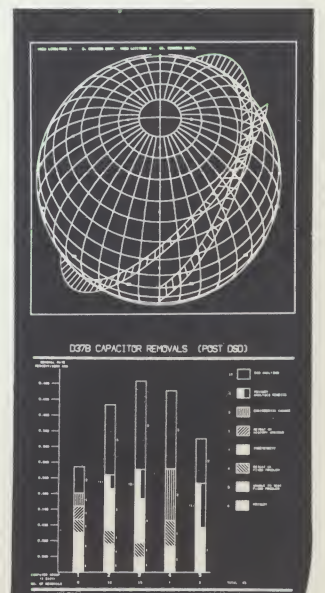


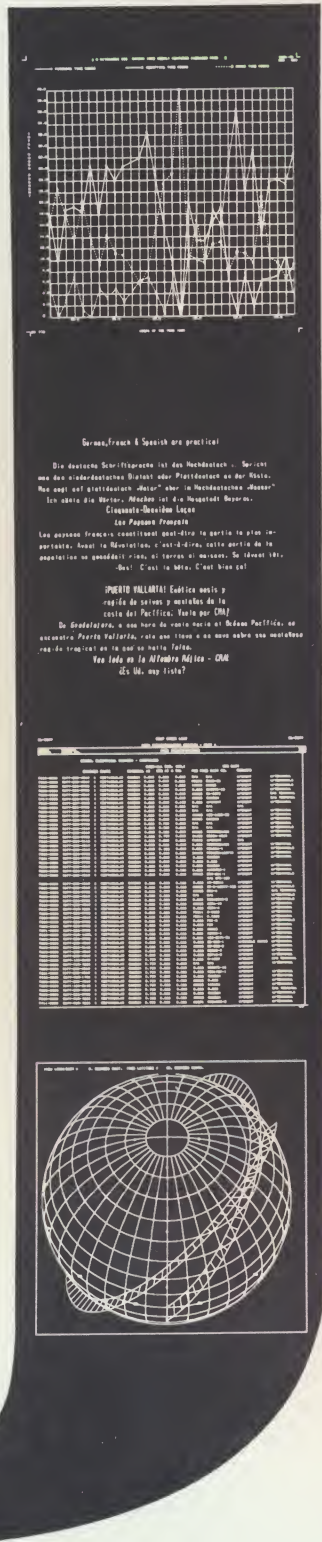


micromation technology

*—a practical solution to the two major
problems in information management*



Stromberg-Carlson Micromation Systems



A family of compatible equipment that can cut turn-around time and lower the cost of turning digital data into readable language!

As the role of the computer has grown, so have the problems of dealing efficiently with the information it generates. The problem has been two-fold: how to get digital data into readable language — fast enough and at a low enough cost to be really practical.

Micromation takes a big step forward toward a solution that lets you take full advantage of your computer. For the first time, Micromation provides a full system of compatible components which are designed to cut turn-around time and lower the costs of converting computer output into readable information.

In a very real sense, Micromation can take the chains off your computer—and free it to go at its own pace. The 600 to 1200 line rate of the mechanical printer which has controlled the production of readable information no longer needs to inhibit data processing. For the first time, you can translate computer codes into useful text at computer speeds — get a copy of that text nearly as fast — and get it to the people who need it through low-cost inquiry stations.

The key element in the Micromation System that makes this possible is a development pioneered by Stromberg-Carlson, the Micromation Recorder. Practically speaking, the S-C Recorder is a system-within-a-system. This single component turns the computer's outpouring of digital data into human language and converts it instantly to computerized microfilm—or hard

copy. It does so economically and at a pace that gives you access to the information immediately. One basic component handles the work which has previously required several pieces of equipment and a number of costly intermediate operations. Here's how it works.



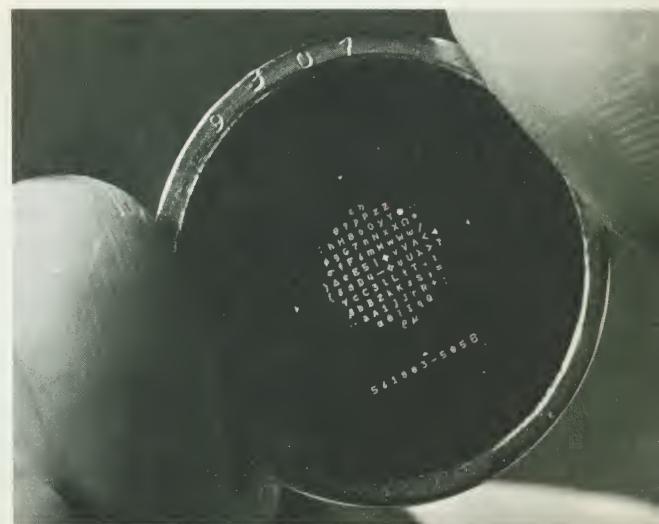
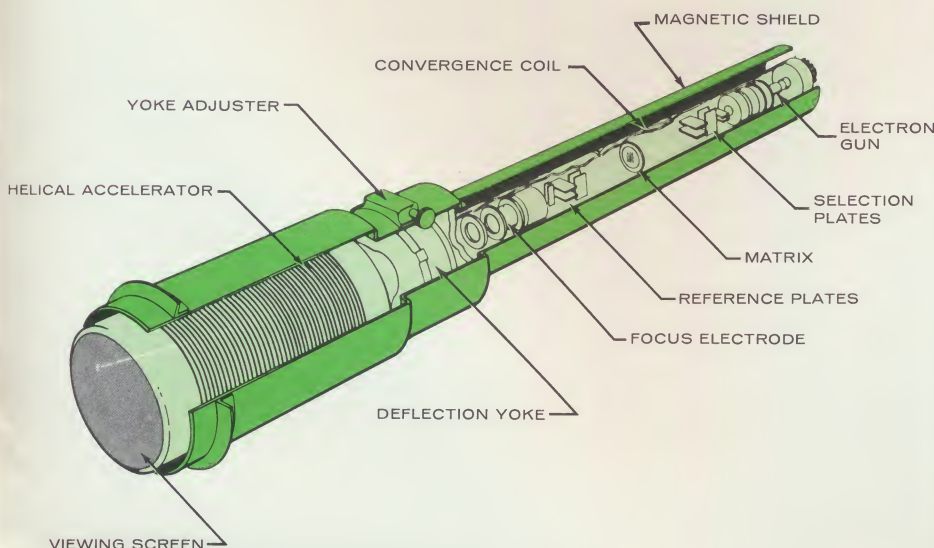
the newest storage and retrieval systems. To save computer time, a special projector can be used to superimpose standard business forms over the text. The microfilm can include all useful information—text, codes and forms. Options produce hard copies of highest quality.

The Micromation Recorder accepts the output of the newest high speed computers and translates it instantly to standard alphanumeric characters. Translation is handled by S-C's own advanced cathode ray tube—the CHARACTRON® Shaped Beam Tube. Readable information is generated by passing an electron beam through characters etched on a miniature matrix placed in front of an electron gun. A stroke generation system creates special characters and graphics by joining short line segments under computer control. The CHARACTRON tube produces an image of exceptionally good resolution and high quality which is displayed on the tube face.

The text or graphics displayed on the tube face are then automatically converted to S-C's own computerized microfilm. The Recorder produces 16mm roll film, optionally produces 35mm film for aperture cards, or microfiche. These can be simultaneously coded for use with

That's the basic Micromation Recorder—cornerstone of the Micromation System. Feed it digital data from the computer or tape transports—it delivers text or graphic translations in the useful form of microfilm—or paper. It does so at rates as high as 70,000 pages in 8 hours—and at costs that mean thousands of dollars worth of savings.

The full Micromation System offers remarkable flexibility, versatility and convenience, because it can be tailored specifically for the job. Not everyone needs every feature, but everyone who deals with large volumes of computer-generated data needs the system. Micromation Systems offer everything you need from four basic Recorders to low-cost inquiry stations—including film duplicators, reader-printers, and production paper printers. Check the next page for a full list of Micromation components and start planning your system now.



A complete family of Micromation-Designed equipment to handle every business need

Micromation Recorders:

S-C 4060 Plotter-Printer for generating precise scientific and engineering graphics

S-C 4360 Recorder for inquiry into a small data base.

S-C 4400 Recorder for frequent inquiry into a medium scale data base.

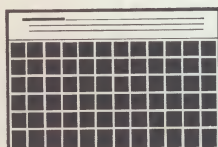
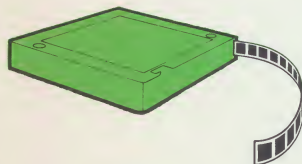
S-C 4440 Recorder for frequent inquiry into a large to medium data base.

S-C 4460 Recorder for producing high quality printing and charts for management reports.

A choice of film output that suits the needs of your specific application:

S-C Microfilm is automatically generated in 16mm roll film for cartridge storage, or optionally in 35mm, suitable for aperture cards. Film can be simultaneously coded for image or line count, Kodamatic, Miracode—even special codes.

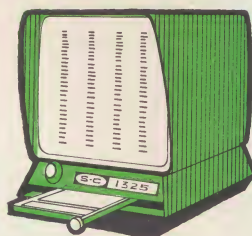
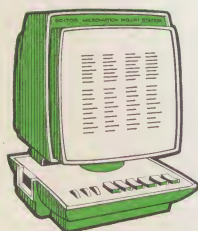
Microfiche: S-C's key option, the Microfiche Camera, permits the automatic generation of titled microfiche at high speeds without costly, tedious stripping. Produces 4" x 6" 72-image fiche or tab card size at the rate of 1 to 5 fiche per minute.



For fast access to data — Inquiry Stations, Micromation-Designed:

S-C 1700 Micromation Inquiry Station offers three interchangeable display screens of different sizes. Displays page or record format. Desk-top size, executive styling.

S-C 1325 Microfiche Inquiry Station displays any one of the 72 texts recorded on a 4" x 6" microfiche on an 11" x 14" viewing screen. Convenient x-y selection provides fast access.

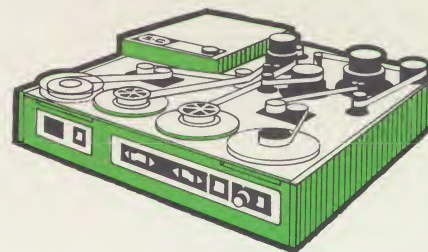


Micromation Printers, designed specially for use with Micromation Systems:

S-C 3400 Production Hard Copy Printer produces paper copies of master-copy quality from roll film at the rate of one 11" x 14" page per second. Since film image may carry standard business forms superimposed over data, forms inventory may be reduced.



S-C 3500 Demand Printer-Reader presents computer data in full page format on daylight viewing screen, then produces a clear, sharp paper copy on demand. Compact executive styling.



An integral part of Micromation Systems—Kalvar Dry-Process Reproducers and Film:

Kalvar Multimode Reproducers provide a compact all-in-one unit for the printing and processing of 16mm or 35mm microfilm duplicates. Dry process uses heat only; no chemicals required. Multimode options permits direct reproduction of negatives or positives, negatives to positives, or positives to negatives. Choice of models with variable speeds, ranging from 5 to 185 ft. per minute. Film requires no dark room; is sensitive to ultra-violet light only. Scratch-resistant thermoplastic emulsion on polyester base has 5-year shelf life.

UAIDE, the society for Users of Automatic Information Display Equipment, is the only international society holding regular meetings to explore design improvements and techniques for use of such equipment. S-C equipment incorporates most of the society's recommendations.

For additional information on Micromation Systems Components write to:

Stromberg-Carlson

A SUBSIDIARY OF GENERAL DYNAMICS CORPORATION

DATA PRODUCTS DIVISION
P. O. BOX 2449 SAN DIEGO, CALIFORNIA 92112 PHONE (714) 298-8331

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S-C 4360 MICROMATION PRINTER



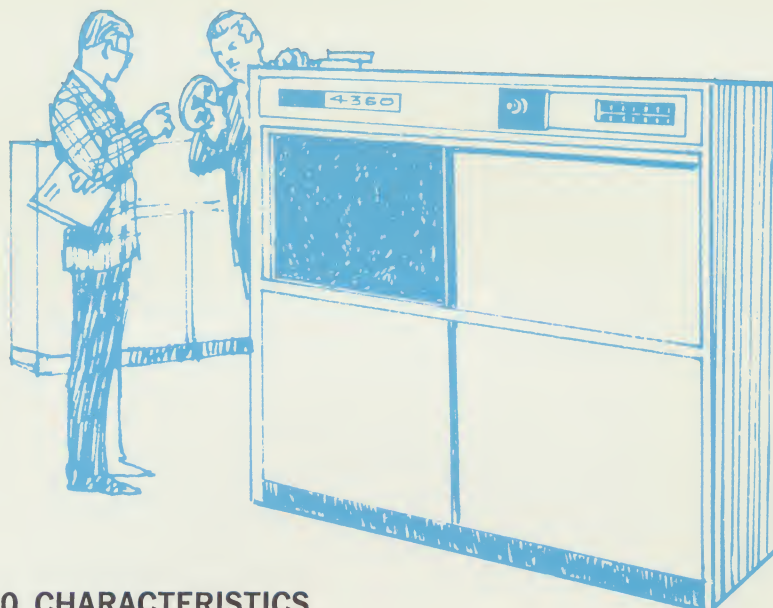
For businesses requiring fast, economical access to a medium-size data base

Now any business with an EDP center can enjoy the advantages of micromation technology. Designed specifically to handle the needs of a small to medium EDP center, the S-C 4360 provides an efficient, economical way to process computer data, turn out readable text records in page-format, and produce easily-retrieved records for your microfilm inquiry system.

The S-C 4360 handles peak processing loads by working at about five times the

speed of a line printer. Accepting computer data at rates up to 30,000 characters per second, the S-C 4360 can "through-put" up to 20,000 pages of readable data in 8 hours. It produces 16mm roll film, simultaneously coded with image count retrieval marks.

Major options include a microfiche camera to produce 105 x 148.75mm or 3¼" x 7⅜" titled microfiche at the rate of 1 to 2 a minute, and a simulator for recording line printer tapes without reformatting.



S-C 4360 CHARACTERISTICS

Compatible with: IBM 2401-Mod 1 tape units, or optionally IBM 729 II or V.

Operation: Accepts input from computers or tape transport, generates alphanumeric text in page format, projects business forms over printed data and produces microfilm, which may be coded with retrieval marks.

Input Speed: Accepts up to 30,000 characters per second.

Through-put Speed: Capable of producing 20,000 pages of data in 8 hours.

Input Format: Accepts 7 or 9 track NRZI BCD, BCDIC or EBCDIC tapes formatted for the S-C 4360 Data Recorder, or optionally, tapes for the IBM 1401 computer and 1403 printer.

Input Density: 800 or 556 bytes per inch.

Character Generator: 5" ApseI® CHARACTRON® Shaped Beam Tube

Character Sets: Standard BCD, BCDIC or EBCDIC, business or scientific sets.

Print Format: Up to 132 characters per line, 64 lines per page, 10 characters per inch, 6 lines per inch. Effective reduction ratios to microfilm of 21:1 to 32:1.

Output: 16mm non-perforated microfilm; optionally produces 105 x 148.75mm or 3¼" x 7⅜" size titled microfiche at high speed.

Standard Features:

- Longitudinal redundancy check
- Lateral parity check
- Business forms projector
- Rotatable film image
- Quick change reduction ratios (film image sizes).
- Variable advance of film in .588mm steps
- Simultaneous encoding with image count marks for fast film retrieval
- Frame Counter

Logic: Integrated circuits, functional boards.

Circuitry: All solid state

Camera: Takes 100 ft. daylight-loading 16mm roll film; provides variable film advance of 9.4 to 17.6mm in .588mm steps; simultaneously encodes film with image count retrieval marks. Quick change lens, film out, film footage and film motion indicators.

Options:

Microfiche camera capable of producing microfiche in 105 x 148.75mm or 3¼" x 7⅜" size, with 60 or more images per fiche, title and cutmark, at rate of 1 to 2 fiche per minute. Titling is handled automatically by input data.

Cyclic Redundancy check correction for 9 track NRZI tapes. This feature corrects multiple single-track reading errors.

Line printer simulator for recording many line printer tapes without reformatting.

Re-read for tape errors

Tape control unit for IBM 729 II or V, 7 track NRZI

50-cycle foreign power option

Operating Temperature: 60°F to 90°F.

Weight: 700 pounds

Relative Humidity: 40% to 70%

Power: Includes power for the recorder and one tape unit—208V (phase-to-phase) ±10%, 3 phase, 4 or 5 wire WYE connected, 60 cycles per second, 1 KW for data recorder, 1.5 for the tape unit—2.5 KW total. 117 volt power feature available.

Dimensions: 66" wide, 68" high, 26" deep.

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S-C 4400 MICROMATION PRINTER

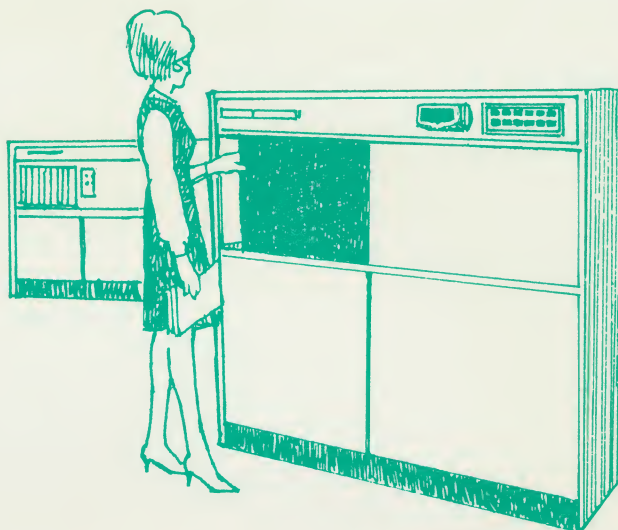


*For businesses with large EDP
centers making frequent inquiries
into large data bases*

For any business that needs to translate large amounts of computer data into readable form, update its records as often as daily, and produce large numbers of easy-to-retrieve records for its microfilm inquiry system. The S-C 4400 brings the advantages of micromation technology to the user with large output requirements — high speed and substantial savings through reduced printing costs. The S-C 4400 translates computer data into page-format alphanumeric text at speeds

up to 62,500 characters per second, and can "through-put" as many as 50,000 pages in 8 hours. It produces high quality 16mm roll microfilm, which can be simultaneously encoded with random retrieval marks compatible with most microfilm inquiry systems. Standard business forms may be superimposed over the text. Major options include an IBM System 360 tape unit interface and a simulator which permits recording from line printer tapes without reformatting.

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Clear, easy to read characters

S-C 4400 CHARACTERISTICS

Compatible with: IBM 729 II, IV, V, and VI and 7330 tape units, optionally with IBM 2401-Mod 1, 2 or 3 tape units.

Operation: Accepts input from computer or tape transport, generates alphanumeric text in page format, projects business forms over printed data, produces microfilm simultaneously encoded with random retrieval marks.

Input Speed: Up to 62,500 characters per second.

Through-put Speed: 50,000 pages in 8 hours.

Input Format: Accepts 7 or 9 track NRZI BCD, BCDIC or EBCDIC recorded tapes.

Input Density: 800, 556 or 200 bytes per inch.

Character Sets: Standard BCD, BCDIC or EBCDIC, business or scientific sets.

Character Generator: 5" ApseI® CHARACTRON® Shaped Beam Tube.

Print Format: 132 characters per line, 64 lines per page, 10 characters per inch, 6 lines per inch. Effective reduction ratios to microfilm of 21:1 to 32:1.

Output: 16mm non-perforated microfilm in page format, encoded with random retrieval marks.

Logic: Solid state standard logic modules.

Standard Features:

- Lateral parity checking
- High resolution characters
- Horizontal and vertical tabbing
- Rotatable film image
- Built-in viewer
- Standard business forms projector
- Quick change reduction ratios (film image sizes)
- Variable film advance
- AC on elapsed time meter

Simultaneous encoding with random retrieval marks—including Miracode, 21 bar code line, 26 bar code line or image count film retrieval marks.
 Frame counter

Circuitry: All solid state

Camera: 600 ft. magazines provide 16mm microfilm recording on non-perforated film. Film out, film footage, film motion and other indicators.

Options:

- Re-read for tape errors
- Record edit
- IBM 2401 tape unit controller
- Line printer simulator for recording many line printer tapes without reformatting

Operating Temperature: 60°F to 85°F

Weight: Approximately 700 lbs.

Relative Humidity: 40% to 70%

Power: Includes power for data recorder and one tape unit—208V (phase-to-phase) $\pm 10\%$, 3 phase, 4 or 5 wire WYE connected, 60 cycles per second, 1.5 KW for the data recorder, 1.5 KW for the tape unit—3.0 KW total. Recorder may be operated on 117 VAC single phase.

Dimensions: 57" high, 63" wide, 22" deep

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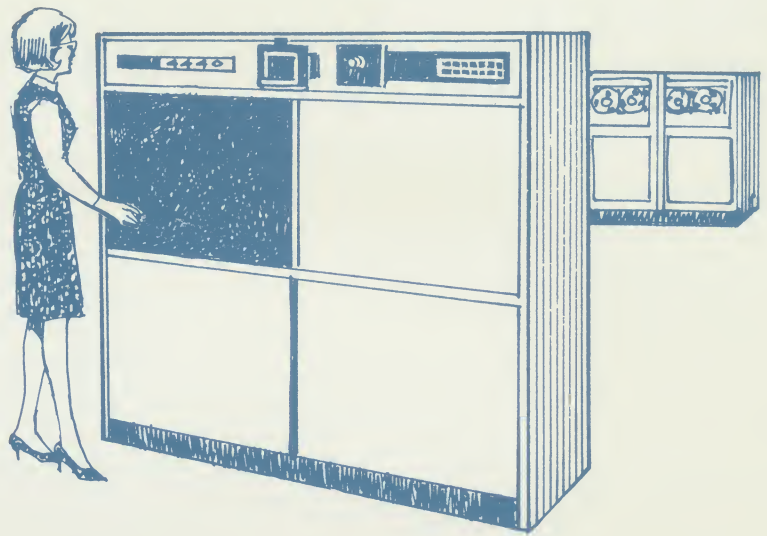
S-C 4440 MICROMATION PRINTER



*For businesses with large EDP
centers making frequent inquiries
into large data bases*

For any organization that must translate large volumes of computer data into readable form, update its records at up to daily intervals, or produce large files of easily-retrieved records for its microfilm inquiry system. The S-C 4440 offers big savings for the user with large output requirements because of its high speed and the way it cuts printing costs. Accepting computer data at up to 90,000 char-

acters per second, the S-C 4440 translates it to page-format alphanumeric text, and can "through-put" up to 70,000 pages in eight hours. It produces high quality 16mm roll microfilm, simultaneously encoded with random retrieval marks compatible with most modern microfilm inquiry systems. Standard business forms may be superimposed over the generated data.



S-C 4440 CHARACTERISTICS

Compatible with: IBM 2401-Mod 1, 2 or 3 tape units or IBM 729-Mod II, IV, V or VI tape units.

Operation: Accepts input from computer or tape transport, generates alphanumeric text in page format, projects business forms over printed data, produces microfilm which is simultaneously encoded with random retrieval marks.

Input Speed: Up to 90,000 characters per second.

Through-put Speed: 70,000 pages in 8 hours.

Input Format: Accepts 7 or 9 track NRZI BCD, BCDIC or EBCDIC recorded tapes.

Input Density: 800 or 556 bytes per inch.

Character Generator: 5" ApseI® CHARACTRON® Shaped Beam Tube.

Character Sets: Standard BCD, BCDIC or EBCDIC, business or scientific sets.

Print Format: 132 characters per line, 64 or 72 lines per page, 10 characters per inch, 6 lines per inch. Effective reduction ratios to microfilm of 21:1 to 32:1.

Output: 16mm, non-perforated microfilm, simultaneously encoded with random retrieval marks, or optionally, 105 x 148.75mm or 3 1/4" x 7 3/8" titled microfiche at high speed. Standard business forms may be superimposed over generated data.

Logic: Integrated circuits, functional boards

Standard Features:

- Re-read for tape errors
- Record edit
- Longitudinal redundancy checks
- Lateral parity checking
- Quick look monitor camera
- Horizontal or vertical tabbing
- Rotatable film image
- Built-in viewer
- Standard business forms projector
- Quick change reduction ratios (film image sizes)
- Variable film advance

Simultaneous encoding of output with random retrieval marks, including Miracode, 21 bar code line, 26 bar code line or image count marks.

Dual tape unit control

Line printer simulator for recording many line printer tapes without reformatting.

Frame counter

Circuitry: All solid state

Camera: 600 ft. or 1000 ft. magazines provide recording on 16mm non-perforated microfilm. Film out, film footage, film motion and other indicators.

Options:

Multiple forms merging projector superimposes up to 2000 forms over text under input data control to cut collation time.

Microfiche camera capable of producing microfiche in 105 x 148.75mm or 3 1/4" x 7 3/8" size, with 60 or more images per fiche, title and cutmark, at rate of 2 1/2 to 5 fiche per minute.

Operating Temperature: 60°F to 85°F.

Weight: Approximately 700 lbs.

Relative Humidity: 40% to 70%.

Power: Includes power for data recorder and one tape unit—208V (phase-to-phase) ±10%, 3 phase, 4 or 5 wire WYE connected, 60 cycles per second, 1.5 KW for the data recorder, 1.5 KW for the tape unit—3.0 KW total.

Dimensions: 66" high, 68" wide, 26" deep

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S-C 4460 MICROMATION GRAPHICS PRINTER



*For businesses with EDP centers
requiring in-house production of graphic reports and charts*

For any organization that needs high speed recording of computer output in readable text, and which frequently produces reports that require graphic presentation of data—such as business charts and graphs.

Translates data from the newest computers or tape transports to alphanumeric at high speeds and produces annotated graph-

ics. Offers upper and lower case letters and proportional spacing for masters of the high quality and handsome appearance so desirable in producing management reports, publications or customer copies for circulation. The S-C 4460 offers the savings of micromation technology to businesses requiring unusual speed, flexibility and quality.



S-C 4460 CHARACTERISTICS

Compatible with: Third generation computers such as Spectra 70, IBM 360, GE-635, etc.

Operation: Accepts input from computer or tape transport, generates alphanumeric text in page format or graphics, projects business forms over generated data, and produces microfilm.

Input Speed: Up to 90,000 characters per second.

Print Format: Proportionally spaced characters, equivalent to executive typewriter print, in standard print format of 132 characters per line, 64 lines per page.

Input: Accepts data on line or from 7 to 9 track tape units compatible with high speed computers.

Input Density: Up to 800 bytes per inch.

Character Generator: 7" CHARACTRON® high resolution character generation tube.

Character Sets: ASCII, EBCDIC, and most others. Offers upper and lower case letters, 10 numerals and 34 special symbols programmable in four different sizes and two orientations to produce images of highest quality and variety. Both scientific and business sets available.

Graphics Generation: The 4460 is capable of plotting or printing at any specified position. In conjunction with forms projector it can produce high quality master images for reproduction of reports, graphs, charts.

Output: 16mm or 35mm microfilm, optional sheet film.

Logic: Integrated circuits, functional boards.

Circuitry: All solid state

Standard Features:

Proportional spacing, re-read, back-spacing, editing
Longitudinal and lateral parity circuitry
Standard forms projector
Rotatable film image
Plotting of graphics under computer control

Camera: 600 ft. magazines provide 16mm or 35mm recording on perforated or non-perforated microfilm.

Options:

Multiple forms merging projector superimposes up to 2000 forms over text under input data control to cut collation time.

Microfiche camera capable of producing microfiche in 105 x 148 75mm or 3 1/4" x 7 3/8" size, with 60 or more images per fiche, title and cutmark, at rate of 1 to 2 fiche per minute.

Sheet-film camera for large images.

Operating Temperatures: 60°F to 85°F

Weight: Approximately 1200 pounds

Relative Humidity: 40% to 70%

Power: 208V, 3 phase, 60 cycle

Dimensions: 70" high, 84" long, 32" wide

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S-C 4060 STORED PROGRAM RECORDING SYSTEM



Converts computer output into precise scientific and engineering graphics and alphanumerics; produces film or optional hard copy

Designed to user requirements, the S-C 4060 is today's more powerful and versatile system for turning computer data into readable form. Working with new generation computers or multiple tape transports, the S-C 4060 translates computer digital codes into graphics or alphanumerics at computer speeds. Provides

ultra-high resolution plotting of points, vectors, curves, Boolean diagrams, global maps, PERT charts, even frames suitable for animated films. Automatically records output on easily-retrieved microfilm or produces optional hard copy. Offers exceptional speed, flexibility and convenience.

S-C 4060 CHARACTERISTICS

GENERAL CHARACTERISTICS:

Compatible with: Third generation computer such as Spectra 70, IBM 360, GE-635, etc.

Operation: Accepts input from a variety of sources, generates alphanumerics or graphics and produces microfilm, simultaneously encoded with random retrieval marks, or optional hard copy.

Input Speed: 90,000 characters or more per second.

Plot Format: 4096 x 3072 equal increment addressable units, variable under program control.

Input: Accepts data from 7 or 9 track tapes, on-line computer data, input from paper tape or cards.

Input Density: Up to 800 bytes per inch from tape.

Output: 16mm or 35mm perforated or non-perforated microfilm, optional on-line hard copy.

Logic: Integrated circuits

Circuitry: All solid state

CHARACTER & GRAPHICS GENERATION:

CRT Tube: 7" high resolution CHARACTRON® character generating tube with 116 character matrix and optional stroke generator to produce additional characters.

Character Sets: ASCII, EBCDIC, and most others. Offers upper and lower case letters, 10 numerics and 54 special symbols programmable in four different sizes and two orientations to produce images of highest quality and variety. Both scientific and business versions of all sets available.

PRODUCT CONTROL UNIT:

Type: Parallel, binary, solid state, integrated circuits, internally stored program.

Addressing: Single address with indexing and indirect addressing.

Word Length: Sixteen bits.

Machine Code: Two's complement

Memory: Coincident-current ferrite core. 8192 word modules, expandable to 32,768 words. 1 microsecond cycle time.

Speed: Add and subtract, 2 microsecond. Multiply, 5.5 microsecond. Divide, 11 microsecond.

Input/Output Lines: For transfer between peripheral equipment and 4060 Product Control Unit: single word, single word with priority interrupt; direct multiplexed channel (DMC).

Interrupt: Single standard interrupt line. Optional priority interrupts available in multiples of 8 up to 256 lines.

Software: Graphical and mathematical software routines supplied.

Operating Temperature: 60°F to 80°F.

Weight: Approximately 1800 pounds.

Relative Humidity: 40% to 70%.

Plotting: Generates plots over a 4096 x 3072 equal increment, addressable point raster.

Spot Sizes: 2, 4, 8 and 16 addressable points.

Plot Modes: Plot random mode requires 33 microseconds. Plot sequential (change of 80 raster positions maximum) requires 15 microseconds.

Line Generation: Four weights between 2 and 16 addressable points. Solid or dashed lines. Maximum line length at minimum weight requires less than one millisecond.

Forms Overlay: Superimposes forms on data generated under program control.

Forms Resolution: Line weights as small as .010 inch may be resolved when form is reproduced in 8½" x 11" format.

Standard Features:

Programmable input control, line generation, plotting
Standard forms projector to superimpose forms over generated image under program control
Rotatable film image
Horizontal and vertical printing
ASR-33 teletype printer

Camera: 600 ft. magazines provide 16mm or 35mm recording on either perforated or non-perforated film.

Options:

On-line film processor
On-line hard copy printer
Simultaneous coding of output with random retrieval marks
Stroke generator
Card reader

Dimensions:

Display Head—84" long, 70" high, 32" wide
Control Unit—66" long, 30" high, 32" wide

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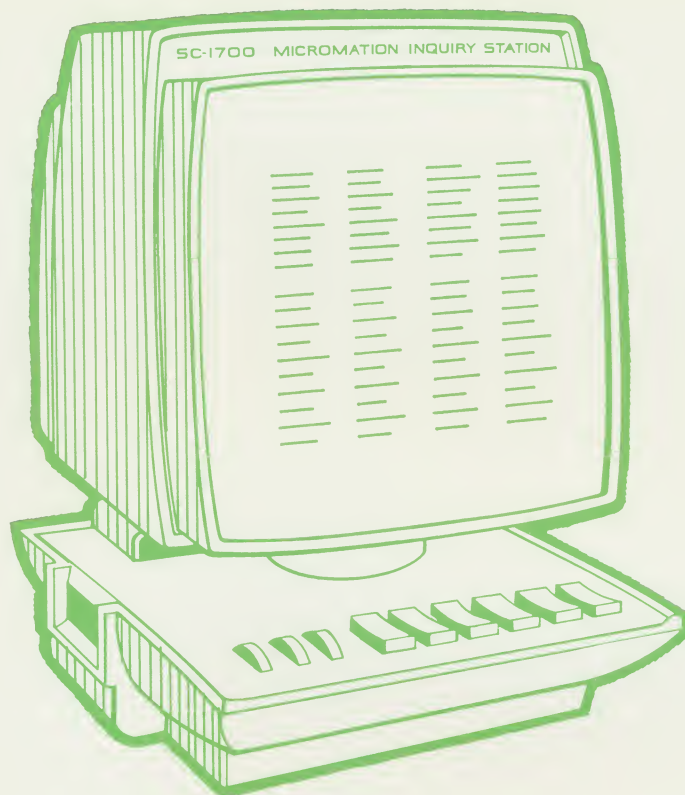
S-C 1700 INQUIRY STATION



Compact executive-styled unit for businesses requiring fast individualized access to data recorded on microfilm

Micromation-designed, the S-C 1700 Inquiry Station permits maximum flexibility in planning an inquiry system that is efficient, functional and economical. Offers three interchangeable display heads with screens of different sizes which may be changed by the

operator. A unique optional control system makes it possible to advance or reverse frames or lines, giving the operator sure control. The S-C 1700 permits access to one item out of a million in just seconds, offers handsome executive styling.



S-C 1700 CHARACTERISTICS

Accepts: S-C Magazines (16 mm - 100'), compatible with other cartridges

Loading: Automatic side loading

Film Transport: Variable Speed, 15 sec. rewind

Screen: Features interchangeable modular display heads, with screens of different sizes, which may be changed by the operator. Screens are offered in such practical sizes as 11" x 5" and 13" x 10"

Screen Color: Green, Blue or Grey

Magnification: 19X or 22X

Image Rotation: 90°

Illumination: Quartz-iodine lamp with didroic reflector and heat filter

Power Requirements: 115 VAC 60 cycles per second.

Dimensions: 15" wide, 14" deep, height depends on screen size

Options:

Screen Brightness Control

Color Filters

Incremental line advance (bidirectional)

Programmed incremental rate (bidirectional)

Frame advance (bidirectional)

Programmed frame rate (bidirectional)

Controls:

On-off-intensity

Image shift

Focus

Set

Reset

Controls for optional line or frame advance or reverse, preset or programmed.

10-digit switches to set frame advance distance

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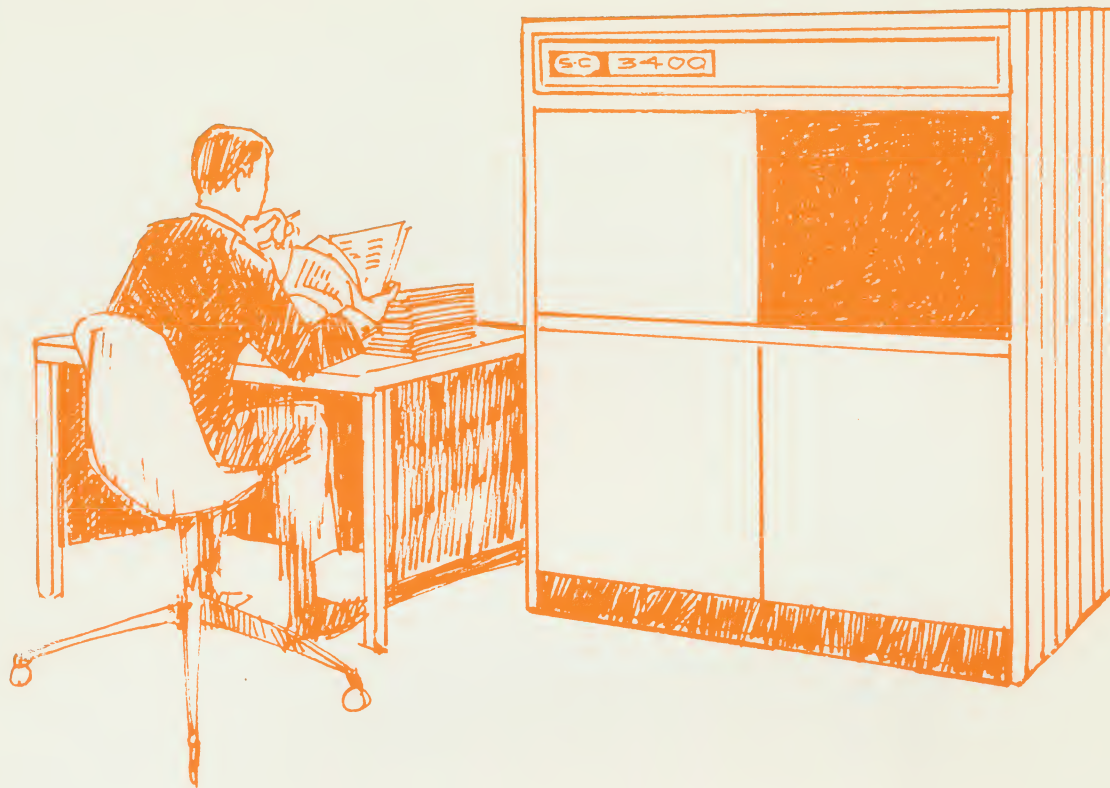
S-C 3400 HARD COPY PRINTER



Produces single or multiple paper copies of high quality from microfilm output of S-C Recorders

The S-C 3400 is Micromation-designed to produce the necessary paper copies of any data recorded on microfilm by S-C Recorders. Completely self-contained, it generates highly legible paper copies at the rate of 60 ft. per minute. Synchronous processing produces the

documents at the point of output in less than 30 seconds after exposure. The number of copies, single or multiple, is operator selected. The speed, flexibility and high quality of the copies produced make the S-C 3400 particularly useful wherever the demand for copies is high.



S-C 3400 CHARACTERISTICS

Hard Copy Output: Finished paper bearing an electrostatically formed image, permanently set and suitable for further processing.

Film Input: Non-sprocketed 16 mm microfilm.

Paper Input: Paper input may be in rolled form or fanfolded configuration; a range of paper format widths may be used in the S-C 3400.

Processing: Synchronous processing produces copies at the point of output in less than 30 seconds after exposure.

Processing Rate: Hard copy may be generated at the rate of 60 ft. per minute based on synchronous operation.

Paper Output: May be rolled, stacked or refolded where fanfolding format is used.

Operator Control: Single or multicopy output may be selected by operator.

Finished Copy: Since each copy, single or in multiples, is generated from the microfilm image, each one has

uniform quality and readability. Since business forms may be superimposed over data in the recording process, finished copies may carry forms as well as computer-generated data.

Power: Operates from 208 or 230 VAC, single phase, 60 cycle $\pm 1\frac{1}{2}$ cps or 208 VAC, 3 phase 60 cycle $\pm 1\frac{1}{2}$ cps. Requires approximately 3000 watts input power.

Operating Temperature: 60°F to 90°F.

Relative Humidity: 20% to 80%.

Dimensions: 66" high, 66" wide, 28" deep.

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Data Products Division, P.O. Box 2449, San Diego, California 92112

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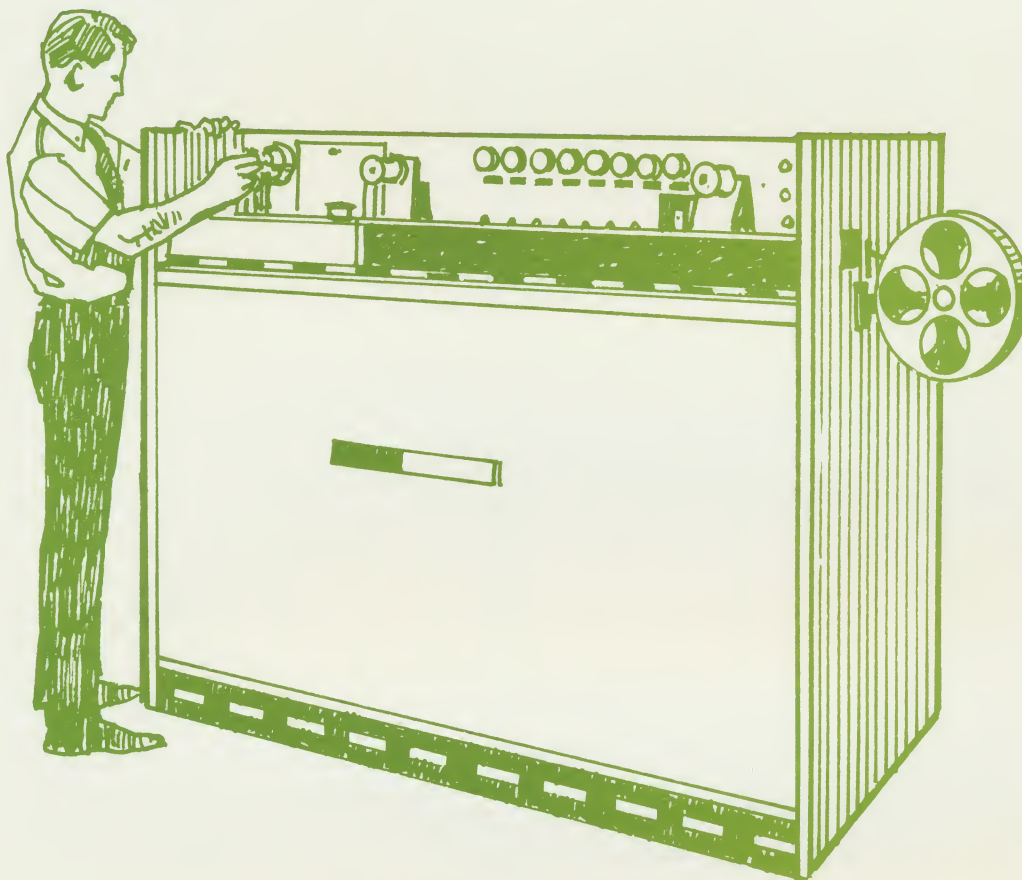
F-89 FILM DEVELOPER



*For development of 16 mm and 35 mm film
produced by S-C Micromation Printers.*

For high speed, high quality developing of film produced by S-C Data Recorders. The developing rate is equivalent to 36,000 lines per minute of computer generated data. Simple,

reliable film development is highlighted by daylight operation. Film development may be either normal negative or reversal. Thorough washing produces archival quality film records.



F-89 CHARACTERISTICS

Develops: 16mm or 35mm perforated or unperforated film.

Speed: 24 feet per minute (equivalent to 36,000 lines per minute of computer generated data).

Chemicals: Automatic, metered flow. Supplied and stored in economical concentrated form.

Installation: Requires hot and cold water at one gallon per minute capacity and a drain.

Power: 115VAC, 60 cycles, 30 amps; or 230VAC, 60 cycles, 15 amps; single phase.

Size: 68" long, 19¼" wide, 67" high.

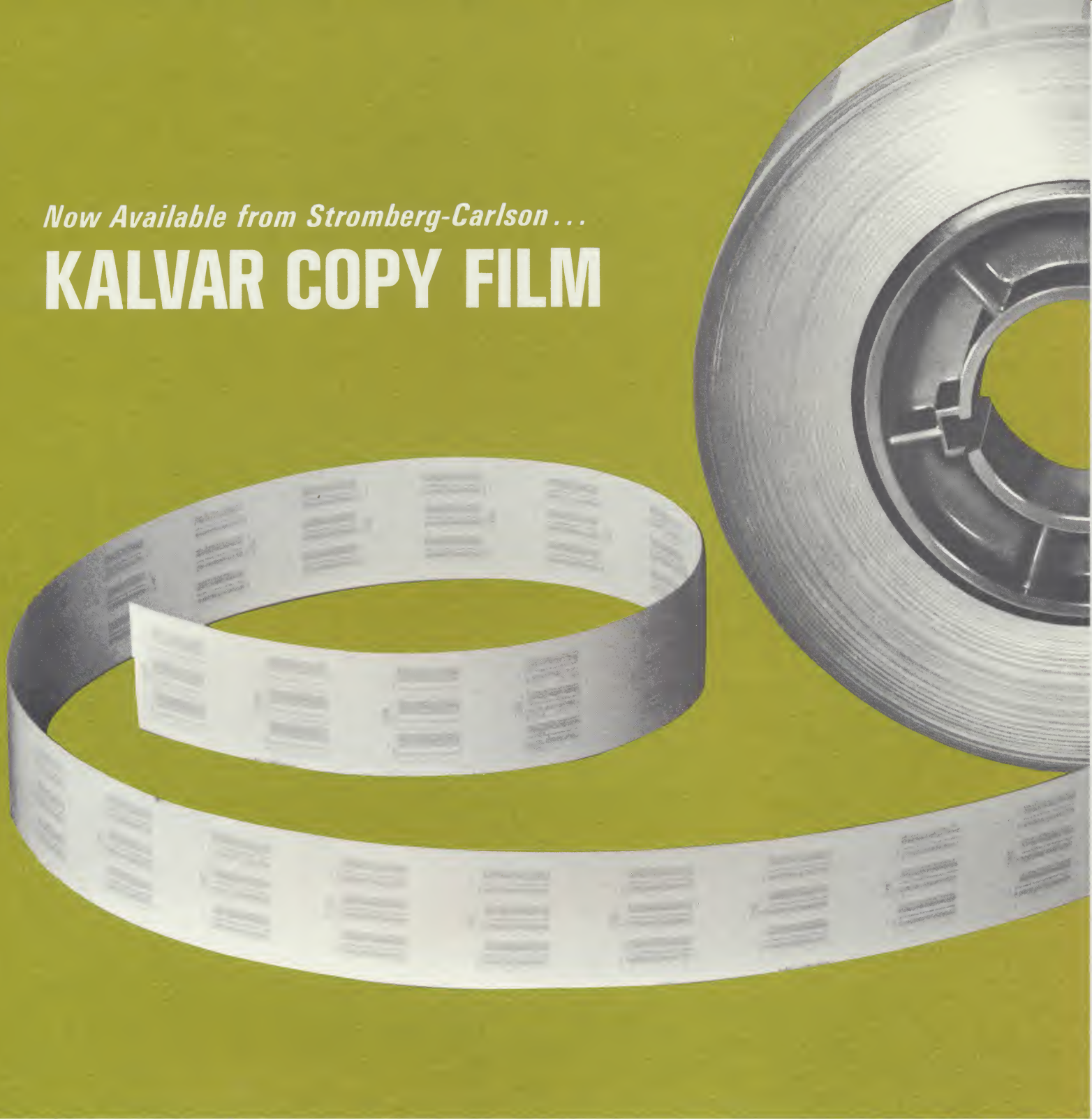
Weight: Empty, 425 lbs.; full, 600 lbs.

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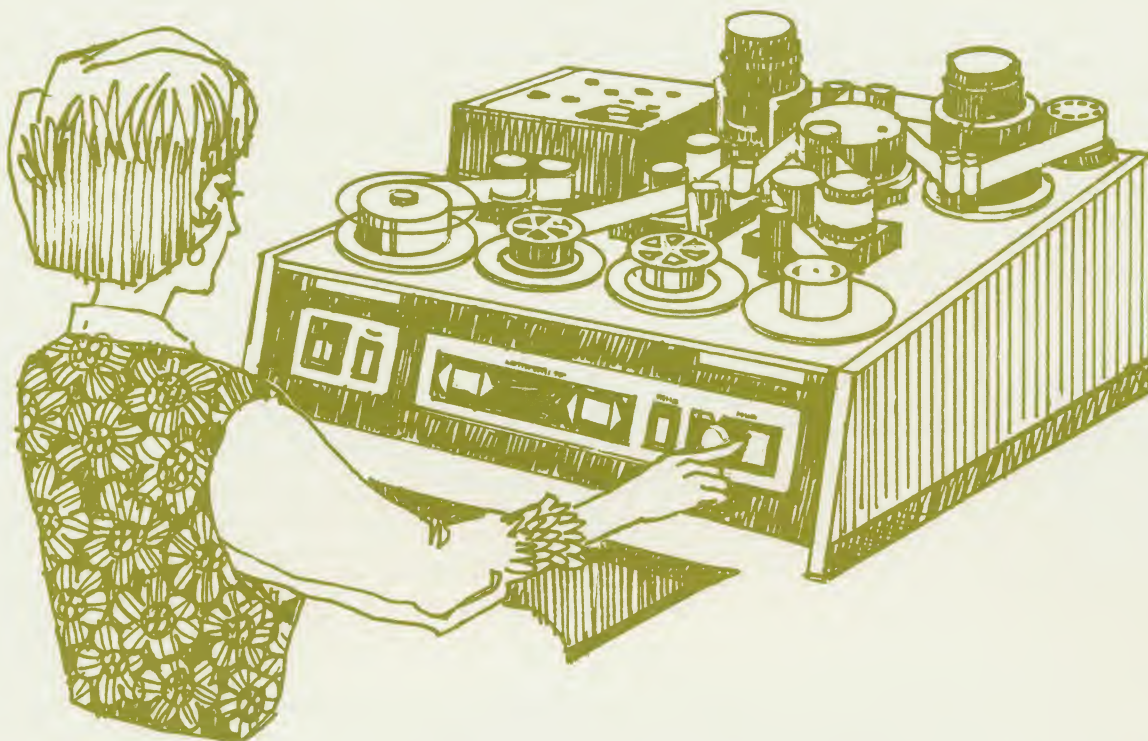
KALVAR COPY FILM



*For fast, high quality production copying
of film produced by S-C Micromation Printers.*

Here is a superior dry process film that represents the standard of excellence for producing film copies. Only light and heat are necessary to produce high quality, permanent images for projection viewing and enlarge-

ment printing. Normal room light handling is a convenience feature which permits copying under ordinary office conditions. Available in a variety of types and sizes to meet all production copy requirements.



KALVAR COPY FILM CHARACTERISTICS

Type	Description	Image Sign
TYPE 10	Medium contrast, general purpose, projection copy film. Used for copying S-C Micromation film and other good quality film.	positive to negative negative to positive
TYPE 16	High contrast, projection copy film. Excellent for producing continuous tone copy. Particularly useful for copying film with large density variations.	positive to negative negative to positive
TYPE 20	Medium contrast, wide latitude projection copy film. Used for copying continuous tone images such as newspaper film records and poorer quality film data.	positive to negative negative to positive
TYPE 30	High contrast, projection copy film. Normally used for making third generation copies from second generation TYPE 10 film copies.	
TYPE 51	Medium contrast, general purpose, direct image, projection film. For use when image reversal is not desired.	positive to positive negative to negative

Base Material: Polyester, 3, 4, or 5 mils thick.

Storage: 0° to 90°F.

Shelf Life: 5 years.

Sizes: All S-C Kalvar Copy Film types are available in the following sizes.

16mm and 35mm Rolls: 550' and 1000' rolls standard. Other lengths available on special order.

Sheets: 3¼" × 5", 3¼" × 7⅜", 105mm × 148mm, 4" × 6", and 5" × 8" standard. Other sizes available on special order.

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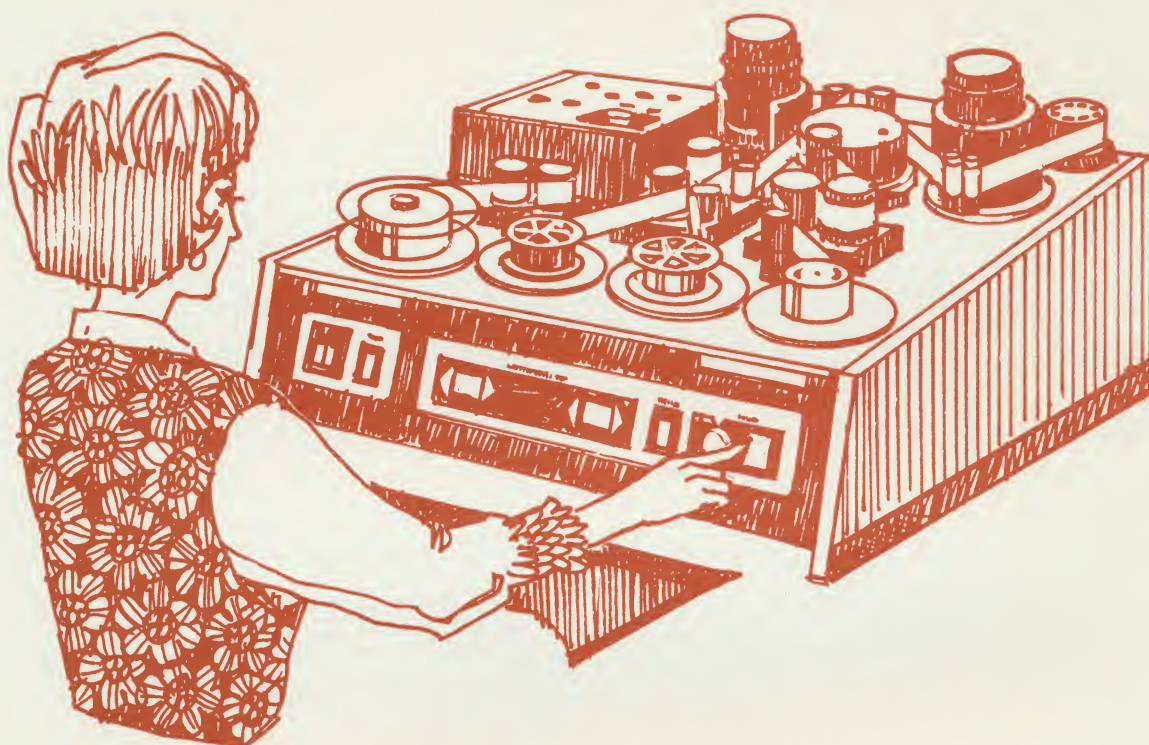
K-92 KALVAR FILM COPIER



*For high speed dry copying of film produced by
S-C Micromation Printers at 60 feet per minute.*

Produces high quality film copies of S-C Data Recorders output film at high throughput rates. The copying rate is equivalent to 72,000 lines per minute of computer generated data. Allows for fast, broad distribution of computer generated data. The

K-92 is a component, desk top copier which affords the convenience of daylight operation. So easy to operate, it can be handled by anyone with no special training. Requires electric power only for completely dry copying operation.



K-92 CHARACTERISTICS

Copies: 16mm and 35mm film, perforated or unperforated in lengths up to 800 feet. Copies may be positive or negative.

Copying Speed: 10 to 60 feet per minute (12,000 to 72,000 lines per minute).

Produces: High quality, polyester base, Kalvar film copies.

Power: 115VAC, 60 cycle, 20 amps.

Size: 34" long, 23" wide, 19" high.

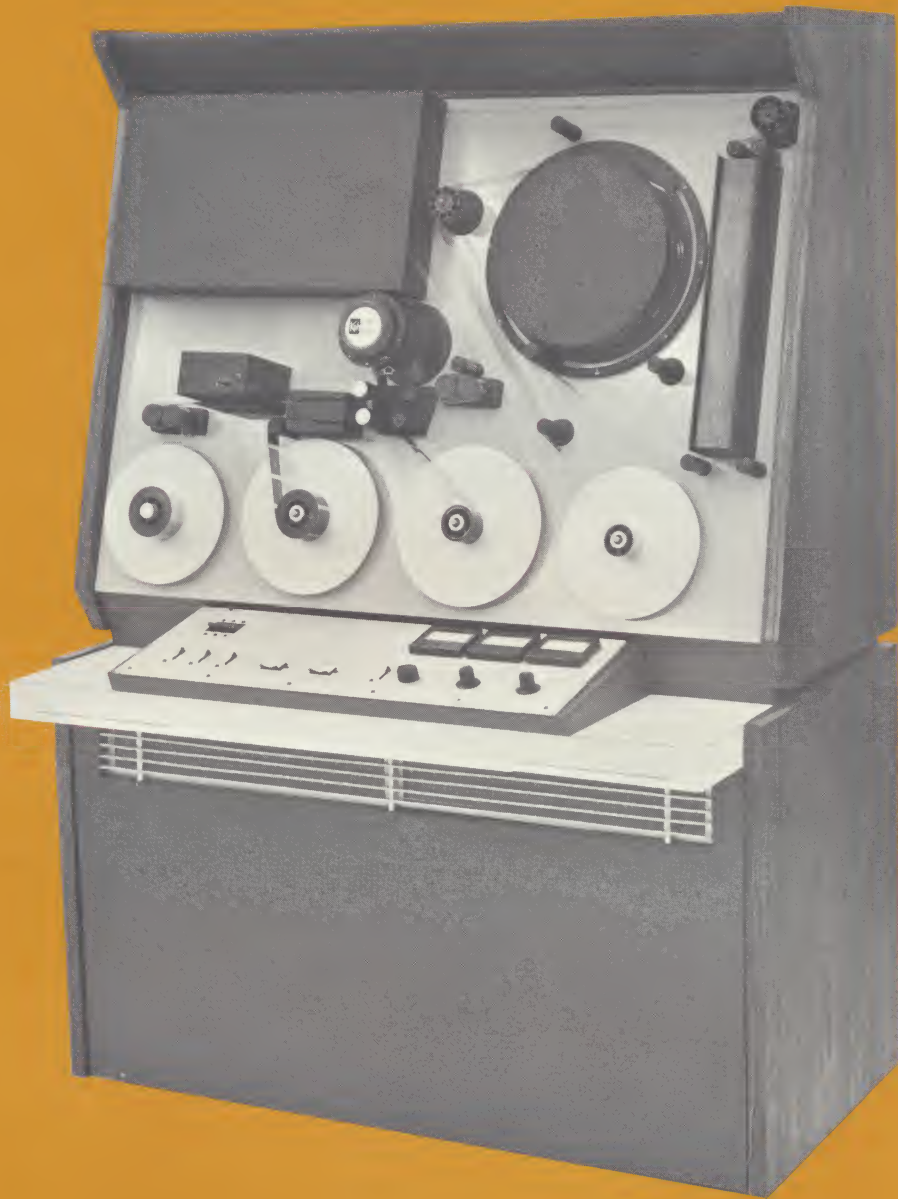
Weight: 145 lbs.

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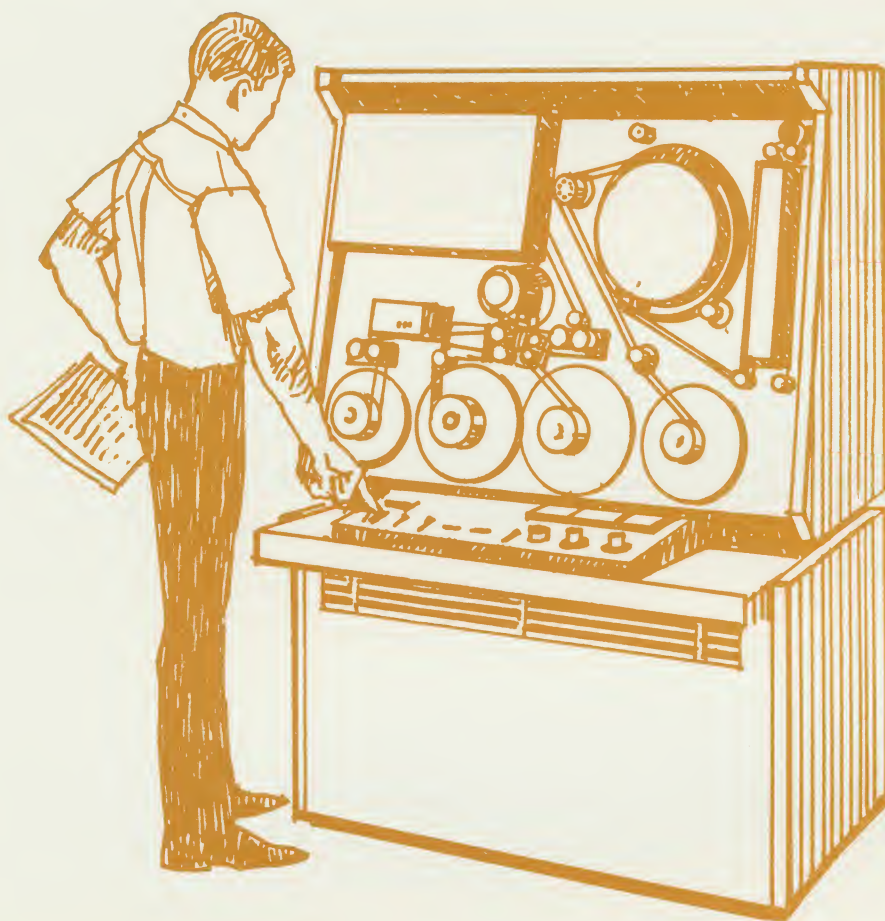
K-94 KALVAR FILM COPIER



*For very high speed dry copying of film
produced by S-C Micromation Printers at 185 feet per minute.*

For high quality, large volume copying of S-C Data Recorders output film. Copying rate is equivalent to 216,000 lines per minute of computer generated data. So easy to operate, film copies can be made by any-

one, with no special training required. Complete office convenience is afforded by dry processing and daylight operation. Electric power is the only installation requirement for the K-94.



K-94 CHARACTERISTICS

Copies: 16mm and 35mm film, perforated or unperforated in lengths up to 1100 feet. Copies may be positive or negative.

Copying Speed: 10 to 185 feet per minute (12,000 to 216,000 lines per minute).

Produces: High quality, polyester base, Kalvar film copies.

Power: 230VAC, 60 cycle, single phase, 30 amps.

Size: 52" long, 34" wide, 66" high.

Weight: 700 lbs.

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